

Serial No. NOT YET ASSIGNED

an idle setting rotation speed. During acceleration running, the exhaust bypass valve is totally closed by judging from increasing rates of the accelerator pedal angle, the engine speed and the vehicle speed. Since the turbine is matched so that the low speed torque may become maximum, the acceleration performance of the vehicle can be improved compared to that in the prior art. During acceleration running, fine angle control of the exhaust bypass valve is performed in order to prevent a shock caused by shifting of the speed change gear. During constant speed running, the exhaust bypass valve is nearly totally opened to decrease the turbine inlet pressure and to improve the fuel consumption rate by judging from increasing rates of the accelerator pedal angle, the engine speed and the vehicle speed. During deceleration running, the exhaust bypass valve is totally closed by judging that the accelerator pedal angle is maximum and the engine speed is the idle setting rotation speed. As described above, by controlling the exhaust bypass valve so as to change between the operating mode requiring supercharging and the operating mode not requiring supercharging, it is possible to match operation of the exhaust bypass valve with operation of the internal combustion engine which makes the fuel economy and the power performance optimum.